



SOME FIAT IMPRESSIONS

A Call at the Famous Turin Factory : Aero Engines, Bombers and Fighters in Production

ON his way back from Venice last week a member of the staff of *Flight* was able to drop off at Turin and make the rounds of the Fiat works. His guide round the aero engine section was the chief designer, Signor Bona, who graciously professed admiration of some of our own departures in engine design. He explained that, although liquid-cooled engines are still going through the works (chiefly for the Fiat C.R.32 fighters), an "air-cooled" policy has been adopted and has seen fruition in two types of two-row radial—the eighteen-cylinder A.80 and the smaller A.74 "fourteen." To tide them over the development period the company obtained the Pratt and Whitney licence and built a number of Hornets.

The A.80 is the first eighteen-cylinder radial to go into large-scale production, and, as exemplified by the A.80 RC41, gives a normal output of 1,000 h.p. at 13,000ft. for a weight of 1,600 lb. Using the Fiat-Hamilton constant-speed airscrew the take-off power is 1,030 h.p.

Normally delivering 840 h.p. at 12,500ft., the A.74 RC38 (47in. diameter) is the power plant of the Fiat G.50 fighter, now in series production at Pisa for the Regia Aeronautica.

Cylinder heads for both models are cast and have two inclined valves apiece. The supercharger is a centrifugal type, the impeller-crankshaft gear ratio for the A.80 RC34 being 9.37 to 1.

Starting is by compressed air on the Garelli system,

partly because of the good results obtained and partly to avoid interference with supercharger design.

It may not generally be realised, by the way, that the A.30 vee-twelve water-cooled unit used in the C.R.32 fighter maintains its power up to nearly 10,000ft. not through supercharging but by the use of an 8:1 compression ratio.

We were particularly impressed by the room where engines are tested under high-altitude conditions. This is probably the only one of its kind in existence and proved invaluable in the development of the current types of supercharged engines. The vast explanatory diagrams on the walls and the grouping of all the controls and dials on a central panel give the room a Wellsian air. Eight hundred h.p. is required for cooling.

At the aerodrome, whither we were taken, we were shown Fiat-Hamilton airscrews in production. Fiats have stolen a march on De Havillands by getting into production with the constant-speed version. According to Signor Gabrielli, the designer of the G.18-V and the G.50 fighter, it is a very great advance over the two-position type.

In the aircraft works we saw the C.R.32 single-seater biplane fighter and the B.R.20 bomber in quantity production for the Regia Aeronautica.

The C.R.32 may be regarded as the opposite number



The Fiat B.R.20, seen in side and front elevation on this page, has a top speed of over 260 m.p.h. This machine is in quantity production for the Regia Aeronautica